DOCUMENT RESUME

ED 266 542 EA 018 220

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TITLE Comparative Educology: A Bridging Concept for Comparative Educational Inquiry.
PUB DATE Jul 84
NOTE 15p.; Paper presented at the World Congress of Comparative Education (5th, Paris, France, July 2-6, 1984). For related documents, see EA 018 219-221.
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Definitions; *Educational Philosophy; *Vocabulary
IDENTIFIERS *Educology

ABSTRACT

The term "educology" refers to the entire fund of recorded knowledge about the entire educational process. This fund of knowledge can be extended through three types of disciplined inquiry: empirical, focusing on scientific and praxiological knowledge; normative, focusing on the intrinsic value of aspects of education; and analytical, focusing on the analytic philosophy of education, the history of education, and the jurisprudence of education. The concept of "educational philosophy" covers both normative and analytical concerns that should be kept distinct. Like anthropology, sociology, and psychology, educology refers to the effects of variables on its central subject. That is, the term "sociology of education" refers to education's effects on society, whereas the term "educology of society" refers to society's effects on education. The term "comparative education" is closely related to educology in at least one of its major meanings: both refer to funds of knowledge about teaching and studying processes and both emphasize the importance of making comparisons between entities within the larger field of education. Although the term "comparative educology" is redundant in that the educological process must involve comparison, it is a useful term since it reminds researchers that evidence for generalizations must be drawn from the total range of ethnic and national contexts that exist in the human community. A three-page bibliography is included. (PGD)

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EA 018 220

Comparative Educology: A Bridging Concept for Comparative Educational Inquiry

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A paper presented to the
Fifth World Congress of Comparative Education,
Paris, 2 - 6 July, 1984

The Educational Process and Educology

There is the educational process, and there is recorded knowledge about that process. Within the process, we find people teaching and studying some content within some geographic, social and cultural setting. Recorded knowledge about that process we find located in books and other media suitable for recording.

Within common usage of the English language, and within special usages of that language, we employ several terms to name the recorded knowledge about education. Included among those terms are *pegagogy, andragogy, Education* and *ethology*.[1] But one term serves the job of naming the fund of knowledge about the educational process even better than these four: *educology*.[2] Among the five terms, it suits the job best for three reasons. It names nothing less than knowledge about education. It names nothing more than knowledge about education. And it avoids conflating the educational process with recorded knowledge about that process.

Educology implies the entire fund of recorded knowledge about the entire educational process. It is not limited only to knowledge about the education of children (pedagogy)[3] or to that of male adults (andragogy).[4] Educology is not recorded knowledge about processes other than education such as knowledge about characterdevelopment (ethology).[5] The name *educology* eliminates the ambiguity that is created by naming the process of guided study *education* and naming the fund of recorded knowledge about that process with the same term, *education*.

Education is not educology, any more than society is sociology, animals are zoology or plants are botany. Fields of phenomena are one thing. Recorded funds of knowledge about those fields are another.

Educology as Warranted Assertions about Education

So, what is the nature of educology? What are its essential elements? Educology consists of warranted assertions[6] about any and all aspects of the educational process. They include warranted assertions about those who play the role of teachers (such as uncles, aunts, friends, university professors, primary school teachers), those who play the role of students (such as children, adults, clerks, bankers, university students, primary school pupils), content that is taught and studied (such as how to tie shoelaces, the virtues of honesty and peaceful resolution to conflicts, quantum physics, standard procedures for flying an airplane, how to repair a tractor). Educology also consists of warranted assertions about the milieux for teaching and studying, and those milieux include geographic, social, cultural, political, historical, religious, legal, administrative and economic dimensions.

Ways in which Educology is Formed and Extended

We can extend the fund of recorded knowledge about education through successful inquiry. Such inquiry implies the research activities of asking, answering and gathering appropriate evidence to support answers to the questions asked. The search implied in the asking may be directed towards what is already known, a *retro-searching*. It may be directed towards reaffirming or negating of what is already known, a *re-searching*. Or it may be directed towards what is not yet known, a *neo-searching*.[7]

In any of the three cases, well disciplined inquiry follows sound rules for adducingnecessary and sufficient evidence and for drawing supportable inferences. This set of rules, logical operations and procedures constitutes the discipline for the inquiry.

Although related, a fund of recorded knowledge is not identical with the discipline used to produce that fund, no more than a house is the same as sound rules for home construction.

Appropriate Discipline for Forming Educology

What is the discipline that is appropriate for the construction of the fund of recorded knowledge about education? Educology implies the use of at least three sets of rules for inquiry: those for forming empirical knowledge claims; those for analytic ones; and those for normative claims.

1. **Empirical Discipline.** Empirical knowledge about education is the set of propositions or statements which is verified by observing actual events within or aspects of a field of phenomena and determining whether the events or aspects match or correspond with the statements.

By its nature, empirical knowledge is problematic. It is probably true, not necessarily true, and it is true by virtue of a high degree of confirmability, a high degree of corroboration and no disaffirmation.

Empirical knowledge about education divides into at least two categories with respect to the aspects of the field of phenomena to which the statements refer. One category of statements is about extant educational phenomena. A second is about effective educational practices.

The first category of statements consists of generalizations about existing features, relationships and states of affairs within the process of teaching and studying. The second category consists of generalizations about educational praxis, i.e., praxis in the sense of the set of activities that we should perform and refrain from doing in order to obtain the results that we want in the process of teaching and studying. The first category of empirical educology is scientific, and the second is praxiological.[8]

Praxiology is the same as the fund of recorded knowledge about effective practices, procedures, or methods for doing something. Praxiology includes technology and more than technology, for it is also the recorded fund of knowledge about how to achieve desired results which are other than a physical object. For example, praxiology includes knowledge about how to maintain mental helth, how to argue effectively a legal case or how to intentionally increase the probability that someone will learn something. Praxiological educology relates closely to questions such as:

(1) What teaching methods are effective in increasing the probability that 9 year olds will develop an understanding of mathematical division?

(2) Which procedures will most likely engender motivation among pupils to learn physics?

In contrast, scientific educology relates most closely to questions such as:

(1) What teaching methods are most commonly used in reading education?

(2) How do the different attitudes of teachers affect the motivation and achievement of their pupils?

The focus of scientific educology is upon what is, what exits, what prevails. It describes and characterizes existing states of affairs within the educational process.

Both sets of knowledge, the scientific and the praxiological, are part of educology. Both require the use of the same discipline

for verification of their truth value, i.e., the rules demanded for empirical inquiry. The two funds of knowledge differ only with respect to the feature or aspect of educational phenomena about which they generalize.

Effective practices which praxiological educology describes and characterizes have only extrinsic goodness, not intrinsic goodness. For example, educologists might find that malicious and cruel treatment are effective in causing someone to learn something. Yet the effectiveness of these treatments would not be sufficient justification to use them as educational practices.

2. Normative Discipline. The distinction between extrinsic and intrinsic goodness within educational practices and states of affairs makes another category of statements about education apparent: those about the intrinsic goodness and badness of goals, practices, policies, conduct, behaviors or states of affairs in the teaching and studying process. Such statements are normative, and examples of them include:

(1) Teachers should never victimize their students.

(2) Teachers should treat all students fairly and without prejudice with respect to race, religion, color, gender or national origin.

We form an agreement with a normative statement by establishing some set of standards and deriving some set of criteria to which we are willing to commit ourselves, or to live by. We observewhether behavior, practices, events, goals, policies or states of affairs conform to the criteria or to what degree they are consistent with our criteria. Statements verified by this process constitute normative knowledge, and the kind of research which forms this knowledge is normative inquiry. Normative inquiry is the same as normative research, and if successful, it forms normative knowledge about education. Such knowledge is true generalizations about intrinsically good states of affairs in the field of educational phenomena. Normative knowledge about education is the same as normative philosophy of education, and it is the same as normative philosophical educology.

3. Analytic Discipline. A third way in which we can verify statements about education is by determining whether they are consistent with other statements. We examine the meaning and necessary implications of a statement in relation to a set of other stements and use necessity reasoning to infer whether the statements are consistent. A statement that can be treated in this way is analytic. Examples are:

(1) Education implies teaching and learning.

(2) Teaching implies the intention for someone to learn, but learning does not imply teaching.

Analytic inquiry, if successful, produces true analytic statements (which is analytic knowledge). Another possible name for analytic knowledge about education is analytic educology, and analytic educology implies at least three categories of knowledge:

(1) Analytic philosophy of education;

(2) History of education:

(3) Jurisprudence of education.

All three are subfunds of knowledge about the implications in meaning of language about education.

The first is knowledge about the necessary implications of any concept or statement in educational language. The second is knowledge about the necessary implications of language about past educational phenomena. The third is about necessary implications of legal language which guides and regulates persons in the teaching and studying process. All three subfunds share the same discipline, i.e., the discipline of analytic inquiry. They differ with respect to the feature or aspect of educational phenomena about which they generalize.

Educology and Philosophy of Education

Normative knowledge about education is normative educology, or normative philosophy of education. Often the term, 'philosophy of education' is used without distinguishing between analytic and normative philosophy. This usage conflates different kinds of knowledge. Analytic philosophy of education requires the use of necessity reasoning, and the knowledge which is analytic philosophy of education describes and characterizes the necessary implications of concepts and sentences used in the language of education. The knowledge that is normative philosophy of education requires the use of evaluative reasoning for its verification, and it describes and characterizes aims, practices, or policies which have worth in education. The theorizing of Dewey, Bayles, and Butler, for example, counts as normative philosophy of education.[9] The theorizing of Ryle, Scheffler, Smith, and Gribble is analytic philosophy of education.[10]

Relevant to this analysis is the concept of 'language of education'. It functions ambiguously. It can mean the same as (1) 'language which occurs within the process of teaching and studying', and it can also mean (2) 'language which is about the process of teaching and studying'. In its first sense, language of education means language in education. In its second sense, language of education means language about education. These two senses can be distinguished by subscripts:

(1) $[\text{language of education}]_1$ is language in education;

(2) $[\text{language of education}]_2$ is language about education.

What a person says while engaged in the role of teaching is an example of [language of education]$_1$ or language **in** education. Educology in the sense of true generalizations about the field of educational phenomena is an example of [language of education]$_2$ or language **about** education.

Given this distinciton between two senses of language of education, a third meaning of philosophy of education is possible to discern. Language about education can be an object of inquiry. It can be analyzed, and true statements about it can be produced. This set of true statements constitutes a fund of knowledge. That fund is the logic and epistemology of making knowledge claims about the educational process.

In common usage, that fund is philosophy of education as well, because in common usage, the term, 'education', names (1) the teaching and studying process and (2) knowledge about that process. But a name that more adequately characterizes the fund is analytic philosophy of educology.[11] The substitution of the term 'educology' for the term 'education' in the name, 'philosophy of education' clarifies the point that the object of knowledge is language **about** education. The substitution of the term 'analytic philosophy' for 'philosophy' in the name clarifies the point that the fund of knowledge requires the use of the discipline of analytic inquiry.

In summary, then, three meanings of the term 'philosophy of education' are possible to discern:

(1) Analytic philosophy of education, or knowledge about meanings of concepts and propositions in educational language;

(2) Normative philosophy of education, or knowledge about worthwhile aims, policies, and behaviors in the educational process;

(3) Analytic philosophy of **educology**, or knowledge about rules, logical operations, and procedures for making warranted knowledge claims about the educational process.

The first two are subfunds of educology. The third is knowledge about educology. It is meta-educology.[12]

Educology and Educational Anthropology, Sociology and Psychology

As has been argued, the terms, 'science of education' and 'scientific educology' are names for a subfund of knowledge about education that has two distinguishing characteristics; (1) It is about extant aspects of the field of educational phenomena, and (2) the set of statements of which it consists are verfiable by some means of observation.

In one sense, scientific educology includes the psychology of education, sociology of education, and anthropology of education. In another sense, it does not. For example, the term, 'sociology', names knowledge about society, and the term, 'sociology of education', is made to function ambiguously. At times, it is used to mean 'knowledge about the effects of education upon society'. At other times, it is used to mean 'knowledge about the effects of society upon education'.

Knowledge which treats society as the dependent variable and which characterizes the effects of other factors upon society is sociology. Knowledge which treats education as the dependent variable and which characterizes the effects of other factors upon education is educology. The first sense of the term, 'sociology of education', implies a subfund of sociology. The second sense of 'sociology of education' implies a subfund of educology. A better name for this second sense is the term, 'educology of society'. The two senses of the term, 'sociology of education', can be distinguished by subscripts.

(1) [Sociology of education]$_1$ is:

knowledge about the effects of education upon society;

knowledge about society; and

a subfund of sociology.

(2) [Sociology of education]$_2$ is:

knowledge about the effects of society upon education;

knowledge about education;

the educology of society; and

a subfund of educology.

The same argument holds for terms such as 'psychology of education', 'anthropology of education', and 'economics of education'. Where they are intended to mean knowledge about the effects of something upon education, they are better named the:

educology of mental processes;
educology of cultural processes; and
educology of economic systems.

The concept of the term, 'educology of', extends to any object of knowledge which might be an aspect of the field of educational phenomena. Thus, the

educology of reading,
educology of religious education,
educology of educational leadership, and
educology of curriculum

are all conceivable and clear in their meaning.

Some maintain that the terms 'educational psychology' and 'sociology of education' name disciplines.[13] It seems to make more sense to regard them as names for funds of knowledge which are not educology at all, in one sense, and as subfunds of educology, in a second sense. And in the second sense, the subfunds imply the use of all three standards for asserting knowledge claims, i.e., the standards for asserting analytic, empirical, and normative knowledge claims.

One red herring that pops up from time to time is that educology is not a discipline in its own right.[14] Rather, it borrows from other disciplines, such as sociology, psychology, and economics. This is a red herring because sociology, psychology, and economics are not, themselves, disciplines. Rather, they are funds of knowledge. Disciplined inquiry is required to develop and form the funds, but the discipline (i.e., the rules, logical operations, procedures) is quite distinguishable from the fund of knowledge that an inquirer or researcher produces as a result of using the discipline. The funds of knowledge that are sociology, psychology, and educology imply use of the same standards for judging the truth value of knowledge claims. An empirical knowledge claim remains empirical, regardless of whether the claim is about society, and thus an empirical sociological claim; about mental processes, and thus an empirical psychological claim; or about education, and thus an empirical educological claim.

A distinction can be made between sociology and educology, of course, but is in relation to the object of knowledge, not the discipline of knowledge. That is sociology characterizes a different object of knowledge (society) from educology (which characterizes education). But both sociology and educology require the use of the same discipline, viz., the discipline requisite for making analytic, empirical, and normative knowledge claims.

Educology and Comparative Education

Comparative education is closely related to educology. The term, 'comparative education', has at least two common usage meanings. In one sense, it is the teaching and studying process as it functions in any and all cultural and national settings. In its second sense, comparative education is the fund of recorded knowledge about two or more entities in the teaching and studying process. More specifically, it is the fund of knowledge which characterizes two or more entities within educaiton with respect to their similarities and differences.

The first sense of comparative education relates closely to the process of education. In fact, it is virtually identical with education, for the educational process includes all teaching and all studying everywhere, regardless of national and cultural boundaries.

The second sense of comparative education is identical with

the notion of comparative educology. But comparative educology is encompassed by educology. Educology implies generalizations about educational phenomena in any and all cultural and national milieux, and sound generalizations require comparison. That is, the discipline required to substantiate knowledge claims about education includes the logical operations of comparison, and comparison is therefore part and parcel of the discipline required for producing educology.

Conclusions

Although educology is the same as comparative educology (i.e., knowledge claims produced from comparisons), those who conduct research about education (educologists) sometimes overlook this point. They restrict their focus to the process of teaching and studying within one ethnic or national milieu and proceed to generalize without sufficient comparison, as if the generalization applied to the educational process within all ethnic and national milieux. This will not do for well disciplined inquiry. The full, well disciplined act of educological inquiry requires the appropriate use of analytic, empirical, and normative discipline, with necessary and sufficient comparison to warrant generalizations.

Even though the name, 'comparative educology', is redundant in that it is implied by educology, it has value for reminding educological researchers that their generalizations must be warranted by evidence from the total sum of ethnic and national milieux which operate within the human community, not merely that of one ethnic group or one nationality.

Footnotes

1. See M.S. Knowles, The Modern Practice of Adult Education: Andragogy versus Pedagogy, New York: Association Press, 1970, and K.P. Cross, Adults as Learners, San Francisco: Jossey-Bass, 1981, for the argument that 'andragogy' is an appropriate name for knowledge about adult education. See J.S. Mill, A System of Logic, New York, 1846, Book VI, Chapter III, Paragraph 4, for the argument for ethology.

2. The argument for the term, 'educology', as an appropriate name for knowledge about education was originally developed by Elizabeth Steiner Maccia in "Logic of Education and Educatology: Dimensions of Philosophy of Education," Proceedings of the Twentieth Annual Conference of the Philosophy of Education Society, 1964. The history of educology is recounted in J.E. Christensen (ed.), Perspectives on Education as Educology, Washington, D.C.: University Press of America, 1981, and in J.E. Christensen and J.E. Fisher, Organization and Colleges of Education: An Educological Perspective, Sydney: Educology Research Associates, 1983.

3. The argument for educology over pedagogy is cogently stated in Elizabeth Steiner, Educology of the Free, New York: Philosophical Library, 1981, and it is iterated in J.E. Christensen, Curriculum, Education, and Educology, Sydney: Educology Research Associates, 1981.

4. A more detailed argument for educology over andragogy can be found in J.E. Christensen, Curriculum, Education, and Educology, Sydney: Educology Research Associates, 1981.

5. See Elizabeth Steiner, Educology of the Free, New York: Philosophical Library, 1981, pp. 50-51, for the full argument for educology over ethology.

6. Warranted assertions here are intended in the sense of statements which have necessary and sufficient evidence to affirm their truth value. It is recognized here that there are different kinds of statements, and each kind requires an appropriate kind of evidence.

7. These distinctions of re-searching and neo-searching are made by Elizabeth Steiner in "Educology: Thirteen Years Later," in J.E. Christensen (ed.), Perspectives on Education as Educology, Washington, D.C.: University Press of America, 1981.

8. Elizabeth Steiner made the distinction of praxiology of education in Elizabeth Steiner Maccia, "The Non-Identity of Philosophy and Theory of Education," in John Martin Rich (ed.), Readings in Philosophy of Education, 2nd ed., Belmont, Calif.: Wadsworth Publishing Co., 1972.

For other discussions of praxiology, see Tadeusz Kotarbinski, Praxiology; An Introduction to the Sciences of Efficient Action, Translated from the Polish by Olgierd Wojtasiewicz, London: Pergamon Press, 1965, and James F. Perry, "Praxiology of Education as a Branch of Educology," in James E. Christensen (ed.), Perspectives on Education as Educology, Washington, D.C.: University Press of America, 1981.

9. See, for example, J. Dewey, Democracy and Education, 1916; E. Bayles, Pragmatism in Education, New York: Harper and Row, 1966; and J. Butler, Idealism in Education, New York: Harper and Row, 1966.

10. See G. Ryle, The Concept of Mind, New York: Barnes and Noble, 1949; I. Scheffler, The Language of Education, Springfield, Illinois: Charles C. Thomas, 1960; B.O. Smith and R.H. Ennis, Language and Concepts in Education, Chicago: Rand McNally and Co., 1961; J. Gribble, Introduction to Philosophy of Education, Boston: Allyn and Bacon, Inc., 1969.

11. This term, 'analytic philosophy of educology', and its conception are derivative of the work of Elizabeth Steiner. See her chapter, "The Nonidentity of Philosophy and Theory of Education" in John Martin Rich (ed.), Readings in the Philosophy and Theory of Education, second edition, Belmont, California: Wadsworth Publishing Co., 1972. Steiner in that chapter uses the term, 'philosophy of educology' rather than 'analytic philosophy of educology'. This second term is used here to add clarity to the explication.

12. This follows to some extent Elizabeth Steiner's use of the term, 'meta-educology', although she includes more in this concept than philosophy of educology. See "The Nonidentity of Philosophy and Theory of Education," Op. Cit.

13. See for example Jeane Pietig, "Is Foundaitons of Education a Discipline?" in Educational Studies, 6:1/2 (1975), 1-2.

14. See for example, "Report of the Task Force on Academic Standards: Guidelines for Professional Academic Instruction in Foundations of Education, Educational Studies and Educational Policy Studies," in the American Educational Studies Association Newsletter, 3:3 (1977), 2-6.

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